

REMARKS

Claims 1-23 are all the claims currently pending in this Application.

Allowed and Allowable Claims

The Examiner maintains that claims 18 and 23 are allowed and that claims 2, 6, 8, 12, and 14 include allowable subject matter and would be allowed if rewritten into independent form. Applicants respectfully request that the rewriting of these claims be held in abeyance at this time.

Prior Art

Claims 1, 5, 7, 11, and 19-22 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Henry (U.S. Patent 7,058,059). Claims 3, 4, 9, 10, 13, and 15-17 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Henry. Applicants respectfully traverse these rejections.

In the rule 1.111 Response of January 7, 2009, Applicants submitted that Henry fails to disclose or reasonably suggest at least “an encapsulation means for encapsulating the wireless LAN signal *in OSI layer 2* by providing the wireless LAN signal with a header having its own terminal’s MAC address as an originating MAC address and a wireless LAN base station’s MAC address as a destination MAC address”, as recited in independent claim 1. Analogous limitations are recited in independent claims 5, 13, 19, 20, 21, and 22.¹

¹ “an encapsulation means for encapsulating a wireless LAN signal destined for a first wireless LAN terminal *in OSI layer 2* by providing the wireless LAN signal with a header having its own base station’s MAC address as an originating MAC address and a second wireless LAN terminal’s MAC address as a destination MAC address”
...(footnote continued)

Specifically, Applicants noted that the encapsulation described in Henry is executed *in the third layer of the OSI model*. That is, *an IP packet is encapsulated by another IP packet*. This is distinct from the claimed embodiments in which *a wireless LAN signal is encapsulated in OSI layer 2*.

Regarding the encapsulation

The encapsulation in Henry, as described in col. 12, lines 22-23 is: MAC_{NIC}, MAC_{AP}
[IP_{MH@AN}, IP_{RAS@ON} [IP_{MH@ON}, IP_{DST@ON}, IP PAYLOAD]]. This is read as IP_{MH@ON}, IP_{DST@ON}, and IP PAYLOAD are encapsulated. This is also expressed in table 916 of Figure 9 of Henry as follows:

address as a destination MAC address” claim 5; “a reception means for receiving a wireless LAN signal which is destined for another wireless LAN terminal and is encapsulated *in OSI layer 2* by being provided with a header having a wireless LAN base station's MAC address as an originating MAC address and own terminal's MAC address as a destination address” claim 7; “a reception means for receiving a wireless LAN signal which is transmitted from a first wireless LAN terminal and is encapsulated *in OSI layer 2* by being provided with a header having a second wireless LAN terminal's MAC address as an originating MAC address and own base station's MAC address as a destination address” claim 11; “an encapsulation means for encapsulating the wireless LAN signal *in OSI layer 2* by providing the wireless LAN signal with a header having its own terminal's MAC address as an originating MAC address and a wireless LAN base station's MAC address as a destination MAC address” claim 13; “encapsulating the wireless LAN signal *in OSI layer 2* by providing the wireless LAN signal with a header having its own wireless LAN terminal's MAC address as an originating MAC address and a wireless LAN base station's MAC address as a destination MAC address” claim 19; “encapsulating a wireless LAN signal destined for a first wireless LAN terminal *in OSI layer 2* by providing the wireless LAN signal with a header having its own wireless LAN base station's MAC address as an originating MAC address and a second wireless LAN terminal's MAC address as a destination MAC address” claim 20; “receiving a wireless LAN signal which is destined for another wireless LAN terminal and is encapsulated *in OSI layer 2* by being provided with a header having a wireless LAN base station's MAC address as an originating MAC address and own terminal's MAC address as a destination address” claim 21; and “receiving a wireless LAN signal which is transmitted from a first wireless LAN terminal and is encapsulated *in OSI layer 2* by being provided with a header having a second wireless LAN terminal's MAC address as an originating MAC address and own wireless LAN base station's MAC address as a destination address” claim 22.

MAC _{NIC}	MAC _{AP}
IP _{MH@AN}	IP _{RAS@ON}
IP _{MH@ON}	IP _{DST@ON}
IP PAYLOAD	

Thus, in accordance with the encapsulation in OSI layer 3 as described in Henry, the resultant packet has a header including *two* IP source addresses and *two* IP destination addresses because the encapsulation takes place in the IP layer (OSI layer 3). The single MAC source address and single MAC destination address in the resultant packet are those MAC addresses which are conventionally added to the packet in the data layer (OSI layer 2). There is no encapsulation in the data layer, so there is no second MAC source address or second MAC destination address.

On the other hand, as recited in the independent claims, the encapsulation of the claimed embodiments of the present invention is *an encapsulation of a wireless LAN signal executed in OSI layer 2*. That is, a packet in the second layer, including a MAC address and MAC payload, is encapsulated and another MAC address is added. Using the expression of Henry, this could read: MAC₁, MAC₂ [MAC₃, MAC₂, MAC PAYLOAD]. Alternately, in table form, as used in Henry, this could be shown as:

MAC ₁	MAC ₂
MAC ₃	MAC ₂
IP ₃	IP ₂
MAC PAYLOAD	

Thus, in accordance with the encapsulation *in OSI layer 2* as in the present invention, the resultant packet has a header including *two* MAC source addresses and *two* MAC destination addresses because the encapsulation takes place in the data link layer (OSI layer 2). The single IP source address and single IP destination address in the resultant packet are those IP addresses which are conventionally added to the packet in the IP layer (OSI layer 3). The encapsulation is in OSI layer 2, and therefore, a packet that *already* has MAC addresses in the header is encapsulated with *additional* MAC addresses in the header.

Regarding the packet being encapsulated

In addition to the above, Applicants note that the presently-claimed invention recites encapsulating *a wireless LAN signal*.

According to Henry, an “intelligent device” is used to enable communication between a mobile host, which transmits and receives IP data, and a WLAN access point. The intelligent device appears, from the point of view of the access point, to access the network like any other IP host connected to the network though a physical network interface device. (Abstract) In order to achieve this, when data is transmitted from the mobile host to the access point, IP packets from the mobile host are extracted, at the intelligent device, from an Ethernet frame and encapsulated with IP headers, and then with MAC headers. Thus, even to the extent that MAC headers are being appended to data, it is *IP packets* that are being encapsulated, *not* wireless LAN signals, as recited in the claims of the present invention.

Discussion of the Examiner's current position: In the current Office Action, the Examiner asserts that "The applicants' representative asserts that in the recited claims, the encapsulation is executed in the OSI layer 2. However, the claims specifically disclose encapsulating the WLAN signal in OSI layer 2 by 'providing the wireless LAN signal with a header having its own terminal's MAC address as an originating MAC address and a wireless LAN base station's address as a destination MAC address.' Since Henry et al. discloses encapsulation of a received WLAN signal having the device's MAC address as the originating MAC address and the access point's MAC address as the destination MAC address (see fig. 9, col. 12, lines 13-25), Henry broadly reads on the applicants' claimed limitation."

In other words, the Examiner appears to assert that because Henry discloses the intelligent device encapsulating a packet with a MAC address of the WLAN interface card as a source MAC address and a MAC address of the access point as a destination MAC address, that this described encapsulation discloses the claimed encapsulation *in OSI layer 2*.

First, Applicants note that in this argument, the Examiner has entirely two specific claim 1 limitations. That is, the Examiner has improperly disregarded the positively recited claim limitations of "encapsulating *the wireless LAN signal..*" and "encapsulating.. *in OSI layer 2*". Henry discloses *neither* encapsulating wireless LAN signal with MAC headers, *nor* encapsulating *in OSI layer 2*, as discussed above.

Second, if the Examiner intended to assert that based on the disclosure of Henry, the limitation of “*in OSI layer 2*” is inherent or would have been obvious, the Examiner is incorrect.

There is a difference between OSI layer 2, which is recited in the claims of the present Application, and OSI layer 3, and the IP protocol described in Henry which operates at OSI layer 3. One of skill in the art at the time of the present invention would have clearly understood this as evidenced in part by the relevant portions of *Newton's Telecom Dictionary, 14th Edition* (copyrighted 1998), submitted herewith. Specifically, the OSI Model includes 7 layers. The first layer is a physical layer, the second layer is a data link layer, and the third layer is a network layer. (*see Newton's*, pages 519-520) The Internet Protocol (IP) operates at the network layer: OSI layer 3. (*see Newton's*, page 383) The Ethernet is a physical link and a data link that represents OSI layers 1 and 2. (*see Newton's*, page 274)

The portion of Henry to which the Examiner refers, col. 12, lines 13-25 describes that “The intelligent device 902 extracts the IP packet from the Ethernet frame, and encapsulates this packet at 916 into the IP-in-IP packet in a WLAN frame with MAC_{NIC} (the MAC associated with the WLAN interface card) as the source MAC address and MAC_{AP} (the MAC of the access point 914) as the destination MAC address.” In other words, the device 902 extracts the OSI layer 3 packet (the IP packet) from the OSI layer 1/2 frame (the Ethernet frame), and encapsulates *the extracted IP packet* into an IP-in-IP packet. Thus, due to the encapsulation *in the IP layer/OSI layer 3*, the resultant packet is an IP-in-IP packet so that the resultant packet includes an IP packet, with IP headers, *in another IP packet*. Thus, the resultant header (IP_{MH@AN}, IP_{PRAS@ON}

[IP_{MH@ON}, IP_{DST@ON}) includes two IP source addresses and two IP destination addresses. This encapsulated packet then *also* has a single MAC source address and a single MAC destination address because it also passes through OSI layer 2.

Thus, Henry fails to disclose encapsulating *in OSI layer 2*. Rather, Henry specifically describes that the packet, *extracted from the Ethernet frame*, is encapsulated in an IP-in-IP packet, meaning that it is encapsulated in the IP layer/OSI layer 3 *and not in OSI layer 2 (the data link layer)*.

Therefore, Applicants submit that the noted limitations of the independent claims are neither inherent in nor obvious from the disclosure of Henry and that dependent claims 3, 4, 9, 10, and 15-17 are patentable at least by virtue of their dependencies.

Applicants respectfully request that the prior art rejections be reconsidered and withdrawn.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.116
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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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